

Позиции СМС по электрическому сопротивлению постоянного тока, обеспечиваемые лабораторией госэталонов в области измерений параметров электрических цепей (НИЛ 2202) ФГУП "ВНИИМ им. Д.И.Менделеева"



Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Independent Variable		Expanded Uncertainty							Service provider	NMI Internal Service Identifier	Comments
Quantity	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?	Matrix Uncertainty				
DC resistance standards and sources: low values	Fixed resistor	Comparison by means of Kelvin bridge and resistance ratio set	0.1	0.1	mΩ	Temperature	20 °C	10	μΩ/Ω	2	95%	Yes		10	VNIIM	Oil bath	
DC resistance standards and sources: low values	Fixed resistor	Comparison by means of Kelvin bridge and resistance ratio set	1	100	mΩ	Temperature	20 °C	2	μΩ/Ω	2	95%	Yes		11	VNIIM	Oil bath	
DC resistance standards and sources: low values	Fixed resistor	Comparison by means of Kelvin bridge and Hamon transfer	1	1	Ω	Temperature	20 °C	0.1	μΩ/Ω	2	95%	Yes		12	VNIIM	Oil bath	
DC resistance standards and sources: intermediate values	Fixed resistor	Comparison by means of Kelvin bridge and Hamon transfer	10	1000	Ω	Temperature	20 °C	0.4	μΩ/Ω	2	95%	Yes		13	VNIIM	Oil bath	
DC resistance standards and sources: intermediate values	Fixed resistor	Comparison by means of Kelvin bridge and Hamon transfer	10	10	kΩ	Temperature	20 °C	0.1	μΩ/Ω	2	95%	Yes		14	VNIIM	Oil bath	

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Quantity	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?	Matrix Uncertainty	Service provider	NMI Internal Service Identifier	Comments
DC resistance standards and sources: intermediate values	Fixed resistor	Comparison by means of Wheatstone bridge and Hamon transfer	100	100	k Ω	Temperature	20 °C	0.5	$\mu\Omega/\Omega$	2	95%	Yes		15	VNIM	Oil bath
DC resistance standards and sources: intermediate values	Fixed resistor	Comparison by means of Wheatstone bridge and Hamon transfer	1	1	M Ω	Temperature	20 °C	1	$\mu\Omega/\Omega$	2	95%	Yes		16	VNIM	Air bath
DC resistance standards and sources: high values	Fixed resistor	Comparison by means of Wheatstone bridge and Hamon transfer	10	100	M Ω	Temperature	20 °C	2	$\mu\Omega/\Omega$	2	95%	Yes		17	VNIM	Air bath
DC resistance standards and sources: high values	Fixed resistor	Comparison by means of Wheatstone bridge and Hamon transfer	1	1	G Ω	Temperature	20 °C	5	$\mu\Omega/\Omega$	2	95%	Yes		18	VNIM	Air bath
DC resistance standards and sources: high values	Fixed resistor	Comparison by means of Wheatstone bridge and Hamon transfer	10	10	G Ω	Temperature	20 °C	50	$\mu\Omega/\Omega$	2	95%	Yes		19	VNIM	Air bath

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Quantity	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?	Matrix Uncertainty	Service provider	NMI Internal Service Identifier	Comments
DC resistance standards and sources: high values	Fixed resistor	Comparison by means of high resistance Wheatstone bridge and resistance imitator	100	1000	GΩ	Temperature	20 °C	1	mΩ/Ω	2	95%	Yes		20	VNIIM	In air
DC resistance standards and sources: standards for high current	DC shunt	Voltamperometric method	5	100	μΩ	Current	10 A to 10 kA	1	mΩ/Ω	2	95%	Yes		21	VNIIM	In air
DC resistance standards and sources: Temperature coefficient	Fixed resistor	Comparison to resistance standard	0.1	100	μΩ/Ω/K	Temperature	15 °C to 30 °C	0.05	μΩ/Ω/K	2	95%	No		22	VNIIM	Oil bath
						Resistance	< 1 MΩ									
DC resistance standards and sources: Temperature coefficient	Fixed resistor	Comparison to resistance standard	2	100	μΩ/Ω/K	Temperature	18 °C to 25 °C	1.00	μΩ/Ω/K	2	95%	No		23	VNIIM	Air bath
						Resistance	1 MΩ to 1 GΩ									
DC resistance meters: low values	Microohmmeter, multimeter	Comparison to resistance standard	1E-06	1	Ω			1E-03 to 1E-04				Yes		24	VNIIM	
DC resistance meters: intermediate values	Ohmmeter, multimeter	Comparison to resistance standard	1	1E+09	Ω			5E-05 to 1E-03				Yes		25	VNIIM	
DC resistance meters: high values	Megaohmmeter, gigaohmmeter, multimeter	Comparison to resistance standard	1E+09	1E+12	Ω			1E-03 to 1E-02				Yes		26	VNIIM	